

Industry Overview

If your operation is involved in the construction industry you might be subject to Resource Conservation and Recovery Act (RCRA) regulations covering the generation, transportation, and management of hazardous waste. Not all construction industry operations produce hazardous waste, but if you use materials such as strong acid or alkaline solutions, paints, solvents, or petroleum products, the waste generated during their use might be hazardous.

You are included in the *construction industry* if you provide services in the following areas:

- Heavy construction
- Plumbing, heating, and air conditioning
- Painting, paper hanging, and decorating
- Mobile home construction
- Prefabricated wood buildings and components
- Masonry, stonework, tile work, and plastering
- Carpentering and floorwork
- Concrete work
- Roofing and sheet metal work
- Glass and glazing work
- Wrecking and demolition.

Hazardous Wastes From Construction

Hazardous wastes that might be generated during construction fall into several major categories:

Ignitable paint wastes generated by painting and other associated processes, including paint preparation and brush and spray gun cleaning

Other ignitable wastes containing paint and varnish removers, paint brush cleaners, and epoxy resins and adhesives used during processes such as painting, cleaning, and degreasing

Spent solvents from many processes, including painting, cleaning, degreasing, air conditioner maintenance, and fluxing

Wastes containing toxic chemicals. Many products such as adhesives, paints, coatings, polishes, varnishes, thinners, and treated woods contain toxic chemicals. Wastes generated during the use of such products are hazardous wastes if they contain certain levels of toxic chemicals.

Strong acid/alkaline wastes used in cleaning, degreasing, and plumbing operations.

Some businesses generate spent heat transfer boxes that contain PCBs. PCBs are not regulated under RCRA; they are, however, regulated under the Toxic Control Substances Act (TSCA).

If you have spent heat transfer boxes, contact your state hazardous waste management agency to determine your responsibilities.

In addition to these wastes, your operations might generate used oil. There are special provisions in the regulations for used oil. Currently most used oil is exempt from EPA hazardous waste regulations if it is recycled. If you recycle your oil, you are not required to use a Uniform Hazardous Waste Manifest, and you do not need to include used oil when determining your monthly hazardous waste generation rate. If, however, you are disposing of used oil yourself or are sending it offsite for disposal, you generally should handle it as hazardous waste because it is likely to be ignitable or toxic. Special requirements apply if you are burning used oil as fuel. EPA is currently developing new regulations for used oil. Some states regulate used oil differently than does EPA; contact your state hazardous waste agency for more information.

Table 1 lists typical processes/operations that use products that might contain hazardous materials and that probably generate hazardous waste. If you produce 100 kilograms (220 pounds or about half of a 55-gallon drum) or more of hazardous waste per month, you must fill out a Uniform Hazardous Waste Manifest when you ship hazardous waste off your property. The Manifest requires the proper Department of Transportation (DOT) description for each waste. Table 2 lists the proper DOT shipping description for a number of wastes that might be generated during equipment repair operations. Table 1 and Table 2 are not comprehensive lists. If you suspect that any waste you generate is hazardous, check with your state hazardous waste agency or EPA Regional office for more information.

Waste Minimization

An effective waste minimization program can reduce the costs, liabilities, and regulatory burdens of hazardous waste management, while potentially enhancing efficiency, product quality, and community relations. Waste minimization techniques that can help you reduce the amount of hazardous waste that you generate include:

- Production planning and sequencing
- Process/equipment adjustment or modification
- Raw material substitution
- Loss prevention and housekeeping
- Waste segregation and separation
- Recycling.

Training and supervision of employees implementing waste minimization techniques is an important part of your successful program. Call the RCRA/Superfund Hotline toll-free at 800-424-9346 (or TDD 800-553-7672 for the hearing-impaired) for waste minimization information and publications.

Table 1
Typical Construction Operations: Materials Used and
Hazardous Wastes that Might be Generated

| Process/ Operation | Materials Used | General Types of Waste Generated |
|---|--|--|
| Paint Preparation and Painting | Paint thinners, enamel reducers, paints, enamels, lacquers, epoxies, acrylics, primers, solvents | Ignitable wastes Toxic wastes Spent solvents Paint wastes |
| Carpentering and Floorwork | Adhesives, solvents, polishes and varnishes, treated wood | Spent solvents Toxic wastes |
| Other Specialty Contracting Activities | Adhesives, paints, coatings, polishes, varnishes, solvents, petroleum products | Ignitable wastes Toxic wastes Spent solvents |
| Heavy Construction | Motor oil and other petroleum products, asphalt | Used oil Asphalt wastes |
| Wrecking and Demolition | | Wreckage and debris that may contain ignitable or toxic substances Used oil |
| Vehicle and Equipment Maintenance for Construction Activities | Degreasers and cleaners, motor oil and other petroleum products, solvents, rust removers | Spent solvents Acid/alkaline wastes Ignitable wastes Toxic wastes Used oil |

Table 2
Construction Waste Descriptions¹

| Waste Type | Designations/Trade Names | DOT Shipping Name | Hazard Class | UN/NA ID Number |
|---|--|---|-------------------------------|--------------------|
| SPENT SOLVENTS AND IGNITABLE OR TOXIC WASTES CONTAINING: | | | | |
| Ethylene Dichloride* | Ethylene Dichloride, 1,2-Dichloroethane | Waste Ethylene Dichloride | Flammable Liquid ² | UN1184 |
| Benzene* | Benzene | Waste Benzene (benzol) | Flammable Liquid | UN1114 |
| Ethyl Benzene | Ethyl Benzene | Waste Ethyl Benzene | Flammable Liquid | UN1175 |
| Chlorobenzene* | Chlorobenzene, Monochlorobenzene, Phenylchloride | Waste Chlorobenzene | Flammable Liquid | UN1134 |
| Methyl Ethyl Ketone* | Methyl Ethyl Ketone, MEK, Methyl Acetone, Meeto, Butanone, Ethyl Methyl Ketone | Waste Methyl Ethyl Ketone | Flammable Liquid | UN1193 |
| Methyl Isobutyl Ketone | Shell MIBK | Waste Flammable Liquid NOS | Flammable Liquid | UN1993 |
| Chloroform* | Chloroform | Waste Chloroform | ORM-A | UN1888 |
| Carbon Tetrachloride* | Perchloromethane, Tetraform, Carbona, Halon 104 | Waste Carbon Tetrachloride | ORM-A | UN1846 |
| Hexachloroethane* | Hexachloroethane | Waste Hexachloroethane | ORM-A | NA9037 |
| Methylene Chloride | Aerotherne MM, Narkotil | Waste Dichloromethane or Methylene Chloride | ORM-A | UN1593 |
| Trichlorotrifluoroethane | Fluorocarbon 113, Freon 113, Ucon 113, Freon TF, Frigen 113 113TR-T, Areton 63 | Hazardous Waste, Liquid, NOS | ORM-E | NA9189 |
| Toluene | Toluol, Methercid, Methyl Benzene, Methylbenzol, Phenylmethane, Antisol IA | Waste Toluene (toluol) | Flammable Liquid | UN1294 |
| Xylene | Xylene, Xylol | Waste Xylene (xylol) | Flammable Liquid | UN1307 |

Table 2 (continued)
Construction Waste Descriptions¹

| Waste Type | Designations/Trade Names | DOT Shipping Name | Hazard Class | UN/NA ID Number |
|------------------------------------|---|---|---------------------------------|-----------------|
| Kerosene | Kerosene, Fuel Oil #1 | Waste Kerosene | Combustible Liquid ³ | UN1223 |
| Cresols* | o-Cresol, m-Cresol, p-Cresol, (m,p)-Cresol, (o,m,p)-Cresol | Waste Cresol | Corrosive Material | UN2076 |
| Trichloroethylene* | TCE, Gemalgene, Lanadin, Lethurin, Nialk, Perm-a-Chlor | Waste Trichloroethylene | ORM-A | UN1710 |
| Mineral Spirits | White Spirits, Naphtha | Waste Naphtha | Flammable Liquid | UN2553 |
| Acetone | Acetone | Waste Acetone | Flammable Liquid | UN1090 |
| STRONG ACID/ALKALINE WASTES | | | | |
| Ammonium Hydroxide | Ammonium Hydroxide, NH ₄ OH, Spirit of Hartshorn, Aqua Ammonia | Waste Ammonium Hydroxide (containing not less than 12% but not more than 44% ammonia) | Corrosive Material | NA2672 |
| | | (containing less than 12% ammonia) | ORM-A | NA2672 |
| Hydrobromic Acid | Hydrobromic Acid, HBr | Waste Hydrobromic Acid | Corrosive Material | UN1788 |
| Hydrochloric Acid | Hydrochloric Acid, HCl, Muriatic Acid | Waste Hydrochloric Acid | Corrosive Material | NA1789 |
| Hydrofluoric Acid | Hydrofluoric Acid, HF, Fluorohydric Acid | Waste Hydrofluoric Acid | Corrosive Material | UN1790 |
| Nitric Acid | Nitric Acid, HNO ₃ , Aquafortis | Waste Nitric Acid (over 40%) | Oxidizer | UN2031 |
| | | (40% or less) | Corrosive Material | NA1760 |
| Phosphoric Acid | Phosphoric Acid, H ₃ PO ₄ , Orthophosphoric Acid | Waste Phosphoric Acid | Corrosive Material | UN1805 |
| Potassium Hydroxide | Potassium Hydroxide, KOH, Potassium Hydrate, Caustic Potash, Potassa | Waste Potassium Hydroxide Solution | Corrosive Material | UN1814 |
| | | Dry Solid, Flake, Bead, or Granular | Corrosive Material | UN1813 |
| Sodium Hydroxide | Sodium Hydroxide, NaOH, Caustic Soda, Soda Lye, Sodium Hydrate | Waste Sodium Hydroxide Solution | Corrosive Material | UN1824 |
| | | Dry Solid, Flake, Bead, or Granular | Corrosive Material | UN1823 |
| Sulfuric Acid | Sulfuric Acid, H ₂ SO ₄ , Oil of Vitriol | Waste Sulfuric Acid, Spent | Corrosive Material | UN1832 |
| OTHER WASTES | | | | |
| Ignitable Wastes, NOS | Ignitable Wastes, NOS ⁴ | Waste Flammable Liquid, NOS | Flammable Liquid | UN1993 |
| | | Waste Combustible Liquid, NOS | Combustible Liquid | NA1993 |
| | | Waste Flammable Solid, NOS | Flammable Solid | UN1325 |
| Used Oil | Various petroleum products | Waste Petroleum Oil, NOS | Combustible Liquid | NA1270 |
| | | Waste Petroleum Oil, NOS | Flammable Liquid | NA1270 |
| Asphalt | Asphalt | Waste Asphalt, at or above its flashpoint | ORM-C | NA1999 |
| | | Waste Asphalt, cut back | Flammable Liquid | NA1999 |
| | | | Combustible Liquid | NA1999 |
| Hazardous Waste, NOS | | Hazardous Waste, NOS | ORM-E | UN9189 |

* Toxicity Characteristic constituent. Any waste that results in a TCLP extract containing a Toxicity Characteristic constituent equal to or above regulatory levels is hazardous.

1 These descriptions may change given variations in waste characteristics or conditions. Note that the DOT shipping name, hazard class, and UN/NA ID number do not directly correspond to RCRA hazardous waste categories.

2 A flammable liquid has a flash point below 100°F.

3 A combustible liquid has a flash point between 100°F and 200°F.

4 NOS - Not otherwise specified.

For further information call the RCRA/Superfund Hotline 1-800-424-9346